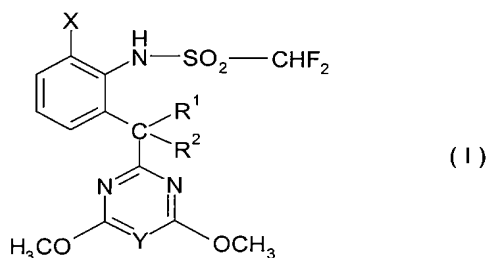


Remarks

Claims 1-5, and 7 are pending in the application. Based on the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding rejections and that they be withdrawn.

I. Description of the Invention

The present invention claims a compound of Formula (I) and a herbicidal composition comprising a compound of Formula (I),



wherein

X represents halogen,

Y represents CH,

R¹ represents hydrogen, and

R² represents hydrogen or hydroxy, or

R¹ and R² together with the carbon atom to which they are attached form C=O.

II. Rejections under 35 U.S.C. § 103

Claims 1-5 and 7 remain rejected under 35 U.S.C. § 103(a) as being unpatentable over Gates *et. al.* (U.S. Patent No. 5,885,935) ("*Gates*") in view of Yoshimura *et. al.* (U.S. Patent No. 6,458,748) ("*Yoshimura*"). Applicants respectfully traverse the rejection.

1. Prima Facie Case of Obviousness Has Not Been Established

Applicants reiterate that for the reasons detailed in Applicants' Reply of February 12, 2008, claims 1-5 and 7 are not *prima facie* obvious in view of the cited references. In sum, the general formula of *Gates* encompasses hundreds of thousands (if not millions) of compounds. None of Examples A1-A127 of *Gates* is a difluoromethanesulfonamide compound of Formula (I) as recited in the rejected claims of the present application. The general formula of *Yoshimura* encompasses hundreds of difluoromethanesulfonamide and trifluoromethanesulfonamide compounds. Examples 1-4 of *Yoshimura* are difluoromethanesulfonamide and trifluoromethanesulfonamide compounds having various substituents on the phenyl ring at the position *ortho* to the sulfonamide moiety. However, none of Examples 1-4 of *Yoshimura* contains a halogen substituent on the phenyl ring at the position *ortho* to the sulfonamide as do the compounds of Formula (I) of the present application. Thus, to arrive at a compound of Formula (I) of the present application, a person of ordinary skill in the art would first select from *Gates* a trifluoromethanesulfonamide compound having an *ortho*-halogen substitution on a phenyl ring, such as Example A7 or A9, and then replace the trifluoromethanesulfonamide with a difluoromethanesulfonamide in view of *Yoshimura*. The Examiner has not articulated a particular reason why a person of ordinary skill in the art would make such a selection and modification.

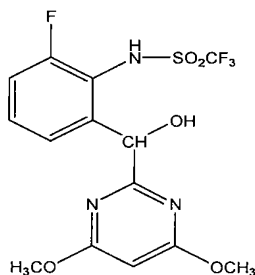
As pointed out in Applicants' Reply of February 12, 2008, Examples A7 and A9 of *Gates* do not exhibit a superior herbicidal effect in pre-emergence studies or post-emergence studies, as compared to other Examples of *Gates* that also have *ortho*-halogen substitution on the phenyl ring, *e.g.*, Examples A6 and A8. *See Gates*, columns 22-23.

Thus, a person of ordinary skill in the art reading *Gates* would not be motivated to select Example A7 or A9 as a lead compound.

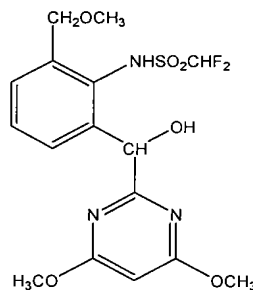
In summary, the Examiner has not established a *prima facie* case of obviousness in view of the cited references.

2. Unexpected Results

Even assuming that claims 1-5 and 7 are *prima facie* obvious in view of the cited references, Applicants reiterate that for the reasons detailed in Applicants' Reply of February 12, 2008, the compounds of Formula (I) of the present application showed unexpected and superior herbicidal activity and lower phytotoxicity as compared to the comparative compounds C-1 (a compound encompassed by *Gates*) and C-2 (Example 2 of *Yoshimura*) having the following structures:



C-1



C-2 (Example 2 of *Yoshimura*)

(See specification, page 36.)

Specifically, the data in Tables 5, 7 and 8 of the specification of the present application demonstrates that Applicants' compounds 1, 3 and 11 have a superior herbicidal activity and lower phytotoxicity as compared to the comparative compounds C-1 and C-2.

3. Additional Evidence of Unexpected Results

The Examiner stated that Examples A7 and A9 of *Gates* differ from the claimed compounds in one variation. (Office Action, p. 4.) According to the Examiner, "Applicants have not compared compounds A7 and A9 of *Gates* to show that instant compounds have unexpected superior activity. Instead, applicants have compared compounds which are not closest prior art compounds and have two variations." (Office Action, p. 5.)

As suggested and requested by the Examiner, additional data of the herbicidal activity of Applicants' compounds in comparison with Examples A7 and A9 of *Gates* is provided in the accompanying Declaration by Dr. Shirakura Shinichi under 37 C.F.R. § 1.132 submitted herewith.

The study described in Table 1 in the Declaration shows the weed control effect of claimed compound No. 9 and Example A9 of *Gates* at different application rates. As shown in Table 1, at all application rates, Applicants' compound No. 9 exhibits higher efficacy against *Cyperus serotinus* and sulfonyl-urea resistant broad-leaf weeds as compared to Example A9 of *Gates*. More significantly, at lower application rates, for example, at 30 g/ha, Applicants' compound No. 9 exhibits dramatically higher efficacy against *Cyperus serotinus* and sulfonyl-urea resistant broad-leaf weeds as compared to Example A9 of *Gates*.

The study described in Table 2 in the Declaration shows the weed control effect of claimed compound No. 11 and Example A7 of *Gates* at different application rates. As shown in Table 2, at all application rates, Applicants' compound No. 11 exhibits equal or higher efficacy against a range of important rice weeds as compared to Example A7 of *Gates*. More significantly, at lower application rates, for example, at 30 g/ha,

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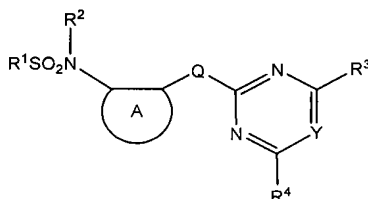
Applicants' compound No. 11 exhibits dramatically higher efficacy against a range of important rice weeds as compared to Example A7 of Gates.

The data provides further evidence that Applicants' compounds have superior herbicidal activity and lower phytotoxicity when compared to the alleged closest prior compounds, Example A7 and A9 of *Gates*. Therefore, Applicants respectfully submit that the additional data further supports the conclusion that the compounds of Formula (I) are not obvious in view of cited references.

4. Infinite Number of Choices for R¹ in Gates

The Examiner stated that "*Gates* teaches generically a finite number of choices for R¹, and exemplifies number of compounds with CF₃ group on the sulfonamide instead of CHF₂. . . . The secondary [*Yoshimura*] clearly teaches analogous compounds bearing sulfonamide with CHF₂ are equally active herbicides. Hence, based on the combined teachings, one trained in the art could be motivated to make compounds wherein the sulfonamide have CHF₂ group. Such compounds are within the skill set of one trained in the art." (Office Action, p. 5.) Applicants respectfully disagree with the Examiner's conclusion that *Gates* teaches a finite number of choices for R¹ and a person of ordinary skill in the art would be motivated to make Applicants' compounds in view of *Gates* and *Yoshimura*.

First, *Gates* generically discloses a broad genus of compounds of the following formula:



wherein

.....
R¹ is an optionally-substituted alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heterocyclyl, benzoheterocyclyl or amino group;

.....
(*Gates*, col. 25, lines 15-17.) Thus, contrary to the Examiner's conclusion, *Gates* discloses infinite number of choices for R¹.

Second, the specific disclosure of *Gates* (Examples A1-A127) exemplifies R¹ being CF₃, CH₂CN, CH₂Cl, CH₂Br, or Me. As discussed above, a person of ordinary skill in the art would not be motivated to select compounds wherein R¹ is CF₃, such as Example A7 or A9, as lead compounds, for further modification because the analogous compounds wherein R¹ is CH₂CN, such as Examples A6 and A8, have better herbicidal effect.

In summary, *Gates* teaches an infinite number of choices for R¹ and a person of ordinary skill in the art would not be motivated to select a compound of *Gates* wherein R¹ is CF₃, and then replace CF₃ with CHF₂ in view of *Yoshimura* to arrive at the compounds of Formula (I) of the present application.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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